Original Research Article

Regional Disparities in the Socioeconomic Development of Uzbekistan

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Abstract

The regional disparities in the socioeconomic development are observed in all countries of the world and are given by objective and subjective reasons. This article provides an overview of a study of regional backwardness in the Republic of Uzbekistan; it also identifies common features among lagging regions and possible reasons for this state. Uzbekistan is divided into 14 regions. By means of the statistical analysis of socioeconomic indicators and empiric study, 5 regions were found to belong into a group of regions with low level of socioeconomic development: Autonomic Republic of Karakalpakstan, Khorezm, Namangan, Syrdarya and Surkhandarya. Even though the absolute elimination of regional disparities is not possible, if they continue to be ignored, they could undermine the socioeconomic and political situation in the country.

Keywords: Republic of Uzbekistan; economy; transition, socioeconomic development; regional disparities; backwardness, rating method.

INTRODUCTION

Uzbekistan is the third largest of the five post-communistic countries in Central Asia. Since it gained its independence, Uzbekistan chose its own way to transform its command economy into a market economy, a way that was more gradual and socially oriented. The Government's effort to protect its population against shocks caused by a very fast transition into a market economy, as well as fast liberalization processes, such as the ones known from Russia and other post-communistic countries, together with a lack of transition specialists, resulted in a slowdown of reforms introduction and implementation.

Because of the size of its population, its strategic geographic position in the region, and its significant economic potential, Uzbekistan could appeal for the position of a regional leader. Ever since the early stage of transition, the country was achieving a positive economic growth rate. According to the Gemayel and Grigorian study (2006), this was possible mainly through a combination of three factors: a) low level of industrialization, b) availability of raw materials for export, and c) energy self-sufficiency of the country. In the new millennium, the average economic growth rate exceeds 6% (Table 1). Even the global financial crisis did not affect Uzbekistan severely due to its limited financial liberalization. Regardless of its credible rates, the economic growth struggled to create more workplaces, and to significantly reduce poverty.

In Uzbekistan, socioeconomic development shows substantial differences across regions and between urban and rural areas (Bhat and Rather, 2011). The great differences existing between regions are given by objective factors such as the regions' territory and their population, availability of natural resources for production (raw materials, arable land, and water for

Table 1: Key Macroeconomic Indicators (% change year on year)

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
GDP	3.8	4.2	4.0	4.2	7.4	7.0	7.5	9.5	9.0	8.1
Industry	5.9	7.6	8.3	6.0	9.4	7.2	10.8	12.1	12.7	9.0
Agriculture	3.1	4.2	6.0	7.3	8.9	5.4	6.7	6.1	4.5	5.7
Capital investment	1.0	4.0	3.6	4.8	7.3	5.7	9.3	25.8	34.1	24.8
Export	0.9	-2.9	-5.7	24.6	30.3	11.5	18.1	40.7	27.8	2.4
Import	-5.2	6.4	-13.5	9.3	28.7	7.2	16.9	40.7	44.2	-2.7

Source: CER (2010).

irrigation), ecological load, and their distance to the center of Uzbekistan and to Central Asia's main markets.

Beside these objective factors, there are some other reasons that are causing regional disparities in the country's socioeconomic development (Yunusov and Yunusov, 2006):

- High concentration of industrial production and production infrastructure in certain regions;
- Insufficient adaptation of the mostly agrarian regions to the market environment;
- Uneven distribution of local and foreign investment;
- Unsound use of the natural and economic potential of the regions;
- Unequal budget allocation; and
- Inadequate economic regulation of the regions taking their unique features into account.

Removing these differences between regions or at least minimizing them would not only adjust their socioeconomic level but help create and maintain a sustainable and balanced economic development in the country. However, so far there has not been any effort or program that takes into account the specific characteristics and opportunities of each region.

MATERIALS AND METHODS

This study aims to define development trends in the regions within Uzbekistan, compare their level of development, and identify those regions which are lagged behind.

To analyze the regions, measure their socioeconomic development level and identify groups with different levels of development, it is necessary to assemble a large number of variables classified as demographic, employment, education, health, industry, agriculture, construction, financial and other welfare indicators, and merge them into a composite index (Özaslan et al., 2006).

The choice of indicators for this study was significantly determined by the availability of statistical data for these indicators. The basic indicators of economic development that are used for assessing and evaluating the country's regions are: Gross regional product (GRP) per capita, Industrial production, Agricultural production, Capital investment, Retail trade turnover, Paid services, Construction works, Export and Import. All indicators given in monetary units were transformed into per capita values for the purpose of having a more objective comparison between regions. Demographic indicators such as population and economically active population are included in the research as well. As a source of statistical data, the publication "Almanac Uzbekistan 2010" of Uzbekistan's Center for Economic Research (CER) was used.

The 2000-2009 period was chosen because in these years Uzbekistan completed the stabilization stage of economic reforms. Also the growth and structure of the country's GDP became progressive and more stable (Shadmanov, 2010).

Time series analysis was used to analyze the statistical data. Data describing an economic development of Uzbekistan's regions were analyzed by their indices and by assessing the indicators' values per capita. An index (e.g. of gross regional product) is the quotient between the indicator's value in year 2009 and indicator's value in year 2000. In this basic form, the index is showing the change of the indicator's value in a certain period of time (10 years in our case).

For demographic indicators, the following statistics were used for the analysis of time series: average absolute increases and the average rates of growth. The average absolute increase is calculated as the quotient of the absolute increase for the entire period divided by the number of time units in the period. The average rate of growth is computed as the geometric average of the rates of growth for the individual intervals of time.

It must be mentioned, that the availability of official statistical data in Uzbekistan is limited, both in terms of physical quantities of yearbook copies, and in the free-access to them for the people. Moreover, even such limited data are not always reliable; this is because the State Statistical Committee rarely publishes comprehensive and clear data indicating the methodologies used for their calculation.

Knowing the shortcomings of the Uzbek statistics, it was decided not to use the results of time series analysis for the traditional forecast of future development trends (which could be in this situation misleading), but to compare the current state of the regional development by a simple ranking approach. This allows us to create a rating of all the regions according to certain indicators and divide them into a few groups with different levels of socioeconomic development.

A rating method was used to aggregate a series of indicators into a more general indicator - rank of the region. For each indicator, the regions were ranked according to the indicator's value per capita and its index (Table 2). To rank all the regions according to a certain indicator, we used the statistical function RANK, included in the MS Office Excel application. For our study, rank 1 corresponds to the worst outcome among regions and rank 14 to the best one.

An advantage of using the rating method consists in the ability to scale indicators measured in different units (monetary terms and others) in the range from 1 to 14, according to the number of regions in Uzbekistan. A disadvantage of this method is that it does not give an

Table 2: Regional demographic data

Region	Population					Economically active population				
	Size ('000)		Index	d_l	k	Size ('000)		Index	d_l	k
	2000	2009	2009/2000, %	('000)	%	2000	2009	2009/2000, %	('000)	%
Andizhan	2201.3	2524.6	114.7	35.92	1.015	828.7	1085.6	131.0	28.54	1.030
Bukhara	1428.5	1600.7	112.1	19.13	1.013	585.9	752.3	128.4	18.49	1.028
Ferghana	2681	3048.7	113.7	40.86	1.014	1022	1310.9	128.3	32.10	1.028
Jizzak	983.1	1107.8	112.7	13.86	1.013	295	365.6	123.9	7.84	1.024
Karakalpakstan	1530	1623.1	106.1	10.34	1.007	489	568.1	116.2	8.79	1.017
Kashkadarya	2189.7	2589.6	118.3	44.43	1.019	725	932.2	128.6	23.02	1.028
Khorezm	1335.8	1546.2	115.8	23.38	1.016	461.2	587.5	127.4	14.03	1.027
Namangan	1938.7	2238.1	115.4	33.27	1.016	609	783.3	128.6	19.37	1.028
Navoiy	787.2	845.3	107.4	6.46	1.008	322.1	405.7	126.0	9.29	1.026
Samarkand	2690.2	3090.7	114.9	44.50	1.016	921	1174.5	127.5	28.17	1.027
Surkhandarya	1753.5	2054.4	117.2	33.43	1.018	574.8	739.5	128.7	18.30	1.028
Syrdarya	646.1	708.4	109.6	6.92	1.010	248.3	311.7	125.5	7.04	1.026
Tashkent	2360.2	2568.8	108.8	23.18	1.009	895.8	1117.4	124.7	24.62	1.025
Tashkent city	2140.1	2220.7	103.8	8.96	1.004	1005.2	1165.9	116.0	17.86	1.017

Notes: Indicator d_l is an average absolute increase, and k is an average rate of growth. For their calculation methods please see "Materials and Methods". Here Index$_{2009/2000}$ is showing percentual changes in the respective indicators' values.
Source: CER (2010), author's calculation.

idea of the real regional backwardness level, but it only ranks the regions in order, based on the values of their socioeconomic development indicators.

At last, all the indicator ranks for each region were summed into a final rank value. Once we knew the final rank value for all the regions, we could divide the range into three equal intervals and assigned each of the 14 regions into the corresponding group according to their final rank value. The three resulting groups are: a) regions with low development level, b) regions with medium development level, and c) regions with high development level. The final rank value for each region was again transformed into a final rating of regional backwardness, which is shown in Figure 1.

For the group of less developed regions, a final comparative analysis was made in order to find their common specific features, and identify the possible causes of their backwardness.

RESULTS

Time series analysis and rating method allowed us to compare the development level of Uzbekistan's regions and consequently stratify them on three groups.

Data on economic development were processed into the aggregate matrix to calculate regions' final sum of ranks, and consequently their development level rating was obtained (Table 3). The aggregate matrix does not include demographic data because of their different

interpretation; therefore demographic data were assessed separately. Population growth varies in different regions: the lowest rate of this indicator is observed in regions with the highest level of industrialization (Navoiy, Tashkent region and the country's capital, Tashkent city), but also in the Autonomic Republic of Karakalpakstan, which is deeply affected by an ecological disaster, the Aral Sea's desiccation. The highest rates of population growth were observed in those regions whose economy is relying heavily on agriculture (Kashkadarya, Khorezm, Surkhandarya and Namangan) (Table 2). The situation in regions with an increase of their economically active population is a bit different: highest rates of this indicators were observed in Andizhan, Namangan, Kashkadarya and Surchandarya, while the lowest rates were observed in Karakalpakstan, Jizzak, Tashkent region and Tashkent city.

For Uzbekistan as a country that is facing a population boom, rapid population growth rate is rather a negative trend than a positive one. According to Razumov (2009), the population of the country will exceed 40 million in year 2040. This growing population is creating a strong pressure on the already limited natural resources, primarily on arable land and water for irrigation.

On the basis of the aggregation of economic indicators and rank assignment, the final rating of regional backwardness was created (Table 3).

Since the values of summarized ranks of each region ranged 74 to 204, we could divide 14 regions on three groups with equal intervals:

Table 3-A: Aggregate ranks matrix

Region	GRP 2009 per capita		Index of GRP 2009/2000		Industrial production 2009 per capita		Index of industrial production 2009/2000		Agricultural production 2009 per capita		Index of agricultural production 2009/2000	
	Value, UZS/person	Rank	Value	Rank	Value, UZS/person	Rank	Value	Rank	Value, UZS/person	Rank	Value	Rank
Andizhan	1277668	9	13.3	10	1408025	11	22.8	13	486770	5	8.3	3
Bukhara	1632348	11	12.6	9	660336	8	8.4	5	698507	13	10.5	11
Ferghana	1182996	8	9.6	2	815626	9	10.0	6	349001	2	7.3	2
Jizzak	1090269	6	14.5	11	283535	5	15.3	12	620780	9	10.4	9
Karakalpakstan	767728	1	11.4	6	213419	1	7.8	2	233257	1	10.3	8
Kashkadarya	1441111	10	15.8	12	1576653	12	25.6	14	416976	4	10.6	12
Khorezm	1001035	5	10.8	4	259604	4	8.0	4	501099	7	8.5	4
Namangan	832581	3	10.9	5	238819	3	7.9	3	406595	3	7.2	1
Navoiy	3049095	13	17.6	13	3715722	14	14.9	10	626878	10	10.9	13
Samarkand	1000226	4	11.7	7	369399	6	11.7	9	546187	8	10.4	10
Surkhandarya	1122812	7	10.3	3	441558	2	10.8	8	496301	6	8.7	5
Syrdarya	830267	2	9.3	1	226246	7	5.0	1	673490	12	9.4	7
Tashkent	1720920	12	12.6	8	1291070	10	10.7	7	656338	11	9.2	6
Tashkent city	3828883	14	21.4	14	1988112	13	15.1	11	0		0.0	

Source: CER (2010), author's calculation.

Table 3-B: continuation

Region	Capital investment 2009 per capita		Index of capital investment 2009/2000		Retail trade turnover 2009 per capita		Index of retail trade turnover 2009/2000		Paid services 2009 per capita		Index of paid services 2009/2000	
	Value, UZS/person	Rank	Value	Rank	Value, UZS/person	Rank	Value	Rank	Value, UZS/person	Rank	Value	Rank
Andizhan	176345	2	12.1	5	499168	10	6.3	2	223124	13	23.8	10
Bukhara	1526457	14	78.3	14	596801	11	12.1	12	178484	10	17.4	2
Ferghana	217601	6	12.7	6	477843	9	6.1	1	155345	8	23.4	9
Jizzak	207799	4	13.2	9	367305	2	13.5	13	116718	4	23.1	8
Karakalpakstan	401947	9	18.2	11	301337	1	9.4	6	91430	2	19.0	4
Kashkadarya	846849	12	17.6	10	368706	3	9.0	5	110519	3	22.5	7
Khorezm	141832	1	8.5	1	447678	8	10.6	10	150045	6	19.8	5
Namangan	213663	5	11.4	3	442652	7	10.1	7	150708	7	28.3	12
Navoiy	695256	11	12.7	7	708151	12	14.2	14	208683	12	25.6	11
Samarkand	178406	3	12.9	8	386870	4	7.8	3	207785	11	30.9	13
Surkhandarya	249124	7	18.5	12	437013	6	11.8	11	86643	1	17.1	1
Syrdarya	292631	8	12.1	4	408385	5	8.9	4	135093	5	33.0	14
Tashkent	485557	10	20.6	13	719013	13	10.5	9	156415	9	18.9	3
Tashkent city	904084	13	11.0	2	2005899	14	10.1	8	850137	14	20.8	6

Source: CER (2010), author's calculation.

Table 3-C: continuation

Region	Construction works 2009 per capita		Index of construction works 2009/2000		Export 2009 per capita		Index of export 2009/2000		Import 2009 per capita		Index of import services 2009/2000		Sum of ranks	Rating
	Value, UZS/person	Rank	Value	Rank	Value, USD/person	Rank	Value	Rank	Value, USD/person	Rank	Value	Value		
Andizhan	100293	13	10.8	6	133.8	9	2.7	10	469.0	13	4.8	13	146	9
Bukhara	289623	10	15.4	12	126.5	8	1.1	3	82.6	7	1.3	4	166	10
Ferghana	101879	8	10.6	5	167.0	10	2.7	11	165.1	10	5.6	14	122	7
Jizzak	152645	4	23.8	14	66.1	4	2.0	7	28.6	4	1.8	8	139	8
Karakalpakstan	111885	2	9.9	4	57.8	3	1.8	6	23.6	2	0.7	1	74	1
Kashkadarya	184353	3	14.0	10	798.8	13	17.7	14	151.8	9	1.7	7	168	11
Khorezm	136270	6	8.3	1	71.1	5	1.6	5	27.0	3	1.7	6	88	2
Namangan	105759	7	11.5	7	38.5	1	1.1	2	44.5	5	3.9	11	90	3
Navoiy	368863	12	18.8	13	583.9	12	2.2	9	421.9	12	1.7	5	204	14
Samarkand	99848	11	9.7	3	52.6	2	1.2	4	106.5	8	2.9	10	114	6
Surkhandarya	101246	1	12.5	8	92.8	6	2.1	8	7.9	1	1.2	3	93	4
Syrdarya	112507	5	8.9	2	94.3	7	0.5	1	64.5	6	0.9	2	100	5
Tashkent	131774	9	13.6	9	411.7	11	2.8	12	314.7	11	2.1	9	171	12
Tashkent city	506462	14	14.3	11	1543.9	14	4.3	13	2458.0	14	4.4	12	187	13

Source: CER (2010), author's calculation.

a) Group of regions with low level of development: 74 < rank <117;
b) Group of regions with medium level of development: 118 < rank <160;
c) Group of regions with high level of development: 161 < rank <204.

According to this division, the group of less developed regions is composed by Karakalpakstan, Khorezm, Namangan, Surchandarya and Syrdarya. In the group with medium level of development we find Samarkand, Ferghana, Jizzak and Andizhan, and finally the members of the group with high level, respectively, are Bukhara, Kashkadarya, Tashkent, Tashkent city and Navoiy. The rating of regional backwardness is presented in Fig. 1, with groups marked by different shades of gray.

Note that even though mathematically the Samarkand region should have been included into the group of regions with low level of development, the author decided to include it into the medium development group because the gap between the value of its ranks sum (Σ_r=114) is almost half way closer to the next region in the medium development group than it is to the next region in the low development group. The author also took into consideration her personal experience and observations when visiting the Samarkand region (for details, see "Acknowledgment").

DISCUSSION

From the time series analysis of economic indicators several findings were obtained. As expected, the regions with higher level of industrialization (Bukhara, Kashkadarya, Navoiy, Tashkent region and Tashkent city) were naturally achieving also the highest values of gross regional product (GRP) and of industrial production. The lowest rates of growth of these indicators were observed in the Syrdarya region, whereas the lowest values per capita observed were in Karakalpakstan.

The agricultural production outcome per capita was the lowest in Karakalpakstan, Ferghana and Namangan, whereas the lowest growth rates were in three regions of the overpopulated Ferghana valley: Andizhan, Ferghana, and Namangan. In these three regions the average population density among them reached 422 persons per km² in the year 2005 (GKS, 2006), and the access to natural resources is already critical there.

In capital investments, it is difficult to overlook the disadvantaged position of the Khorezm region, which received the smallest value of investment per capita, and where this indicator was growing in the slowest rate during the analyzed period. Khorezm's such marginal status in the distribution of mostly state investments could be partially explained by the small size of the region and its high population concentration, which
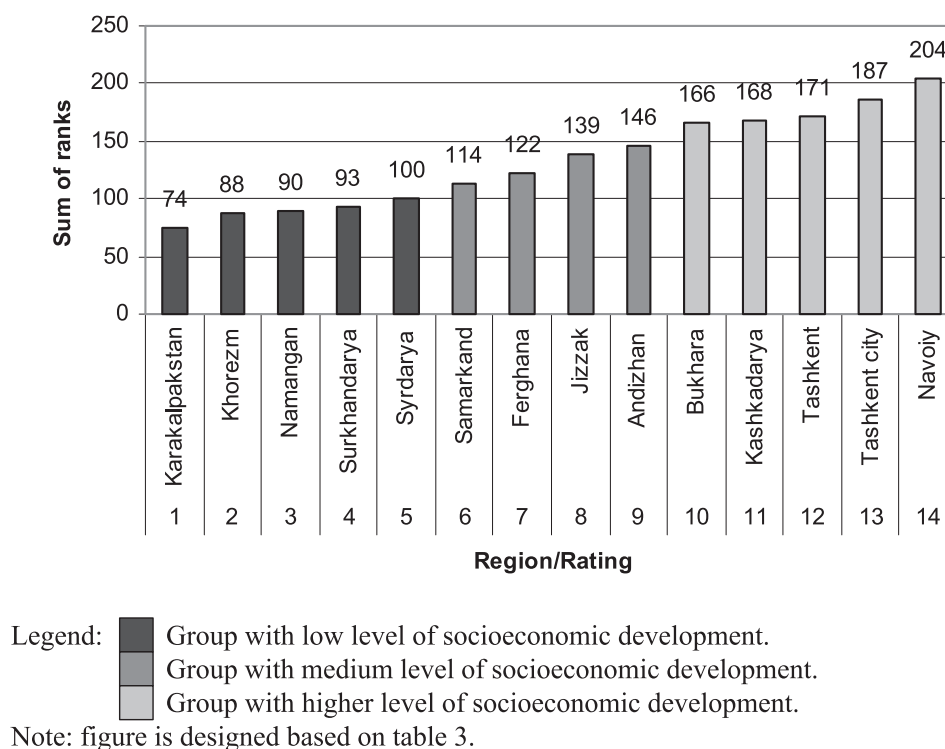
Legend: ▉ Group with low level of socioeconomic development.
▉ Group with medium level of socioeconomic development.
▉ Group with higher level of socioeconomic development.
Note: figure is designed based on table 3.

Figure 1: Regional backwardness rating.

allows even small amounts of deposited funds to cover a large proportion of the population (this is a positive effect of the great concentration of population in a small area).

The lowest values of retail trade turnover per capita and paid services per capita were found in the regions of Karakalpakstan, Kashkadarya and Jizzak and, respectively, in Karakalpakstan, Kashkadarya and Surkhandarya. These results might be highly related to the low income level of the population and the high poverty rates in these regions.

In accordance to the statistical data, Namangan region is characterized by the lowest values of export per capita, which during the analyzed period increased very slowly. As for the value of import, the most lagging regions here are Karakalpakstan and Surkhandarya, both in real volumes and in the pace of the import growth between the years 2000 and 2009.

The conducted study showed the presence of disparities in the level of socioeconomic development of Uzbekistan's regions. According to the compiled rating of backwardness, five regions belong to the group with low level of socioeconomic development: Karakalpakstan, Khorezm, Namangan, Surkhandarya and Syrdarya. Consequently, a deeper analysis was conducted on those regions with the aim to define common features of their development and reasons why those regions are lagged behind. This analysis revealed

common features in the lagging regions. The features are following: there is a primarily agrarian economy with a lower level of industrialization, low wages with high unemployment and a high poverty rate. Furthermore, their technical infrastructure is in a poor state, and there are certain ecological problems present.

The objective factors of regional disparities, such as the region's geography, its remoteness from the center or natural resources availability can barely be changed or improved. However, other factors, such as industry concentration, ecological load or budget allocation can be corrected and improved.

One of the main reasons of regional backwardness is a low level of industrial development found in the lagging regions of the country. This problem is directly connected with the level of socioeconomic development. In Uzbekistan, the localization of industrial enterprises was designed in the past by soviet planners. Nowadays, a trend of increasing of the existing industrial concentration is observed: new enterprises are often opening on the base of already introduced businesses as a diversification of their production (e.g. Navoiy mining-metallurgical processing plant). As a result, regions which are already industrialized, are further increasing their level of industrialization, while in primarily agrarian regions the development of the industry is either happening on a very small-scale or slowly. Under these circumstances, the

decision-making process of local and central authorities regarding the location of new enterprises will play a significant role in smoothing the current disparities of industrial and economic development.

In Uzbekistan, the degradation of the environment and most of the main ecological threats are coming from industrial facilities' pollution, poor agricultural techniques and hazardous or radioactive waste sites (Government of Uzbekistan/UNDP, 2008). The ecological load in the marginal regions is often either related to industrial activities outside them (e.g. radioactive waste sites in Kyrgyzstan close to the border with Namangan region, or pollution from Tadjikistan's aluminum smelter close to the border of Surkhandarya) or to the poor agricultural practices (e.g. neglect of crop rotation, overuse of chemicals, using very outdated systems for irrigation etc.).

The alleviation of the ecological load in the regions with low level of development not only requires a significant investment in the reconstruction and modernization of industrial waste treatment technologies and even more in the irrigation and drainage systems, but also an effective interstate cooperation for cross-border issues. The improvement of the environmental situation in the Aral Sea area (which includes the Karakalpakstan and Khorezm regions) requires a much more complex approach because of the current state and extent of this problem.

Agriculture is the main source of income for the population in lagging regions. Due to the resources scarcity, lack of jobs and high population growth in rural areas, agriculture is unable to provide a decent income for all its employees. The current state policy towards agriculture, consisting in vast state intervention in market relations, is not helping marginal regions to overcome development obstacles but rather the opposite.

Taking all these factors into consideration, is obvious that to ensure a comprehensive development of all regions, not only those lagging behind, the state needs to elaborate and implement effective strategies of industrialization and urbanization.

Due to the above mentioned objective reasons for regional disparities, their absolute elimination is impossible. However, wise regional policies should be oriented towards the prevention of an excessive regional polarization, which would only aggravate the actual socioeconomic and political situation in the country.

REFERENCES

Bhat B., Rather T. (2011): Wisdom of Social Change in Uzbekistan: Appliance of Ethnicity, Region and Religion. International Journal of Central Asian Studies 15: 84-112.

CER (2010): Almanac Uzbekistan 2010. Center for Economic Research, Tashkent, 168 p; ISSN 2091 5063.

Gemayel E., Grigorian D. (2006): How tight is too tight? A look at welfare implications of distortionary policies in Uzbekistan. The European Journal of Comparative Economics 3 (2): 239-261.

GKS (2006): Zdravookhraneniye v Uzbekistane: fakty i cifry. State statistical committee of the Republic of Uzbekistan, Tashkent, 56 p.

GOVERNMENT of UZBEKISTAN/UNDP (2008): Ecologicheskiy obzor Uzbekistana, osnovanny na indikatorakh. State committee for nature protection of the Republic of Uzbekistan, United Nations Development Program in Uzbekistan, Tashkent, 88 p.

Özaslan M., Dincer B., Özgür H. (2006): Regional disparities and territorial indicators in Turkey: Socio-Economic Development Index (SEDI). In: Proceedings of the 46th Congress of the European Regional Science Association (ERSA), August 30 – September 3 2006, University of Thessaly, Greece, p.34. Available at http://www-sre.wu-wien.ac.at/ersa/ersaconfs/ersa06/papers/858.pdf

Razumov J. (2009): Uzbekistan: demograficheskaya inertsiya kak povod zadumatsya [online]. War and Peace Institute, November 2009. Available at http://www.warandpeace.ru/ru/analysis/view/41403/, Acessed October 28, 2011

Shadmanov E. (2010): Issues of balanced development in Uzbekistan economy. Perspectives of Innovations, Economics & Business 5 (2):43-44.

Yunusov A., Yunusov Sh. (2006): Reducing Socioeconomic Inequality in Uzbekistan. In (Ed. Raza Ahmad): The role of public administration in building

a harmonious society. Selected proceednings from the Annual Conference of the Network of Asia-Pacific Schools and Institutions of Public Administrations and Governance (NAPSIPAG), 5-7 December 2005, Beijing, China. Asian Development Bank, 2006, pp.307-318; ISBN 978 971 561 616 4.

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